

CLAIMS

What is claimed is:

1. A beam scanning apparatus which projects a beam onto a photoconductive drum according to image data comprising:

a light source to emit the beam;

a micro polarized array to receive the beam emitted from the light source, comprising a plurality of polarized cells arrayed along a predetermined direction;

a polarization direction adjuster to adjust transmission directions of each of the polarized cells according to the image data; and

a light detecting plate to receive the beam from the micro polarized array, to transmit polarized elements of the received beam in a predetermined direction therethrough and to emit the transmitted elements to the photoconductive drum.

2. The beam scanning apparatus in claim 1, further comprising a micro-lens array having a plurality of lenses formed between the light detecting plate and the photoconductive drum, to focus the polarized beams from the light detecting plate by pixel areas corresponding to the polarized cells and to emit the focused beams to the photoconductive drum.

3. The beam scanning apparatus in claim 1, wherein the polarized cells are made of high polymer materials which vary in polarization direction in accordance with whether tension is applied, and the polarization direction adjuster includes a plurality of driving devices respectively connected to each of the polarized cells to contract the polarized cells according to electrical signals of the image signal.

4. The beam scanning apparatus in claim 3, wherein the driving devices are

piezoelectric sensors.

5. The beam scanning apparatus in claim 1, further comprising a reflective member that reflects the beams emitted from the light source in a direction different from the direction of the micro polarized array, so that the beams can fall incident on the micro polarized array.

6. The beam scanning apparatus in claim 2, wherein the light source, the micro polarized array, the light detecting plate, the micro-lens array, and the photoconductive drum are disposed on a same plane and in parallel with each other.

7. An apparatus comprising:
a light source to emit a plurality of beams;
a plurality of polarized cells to receive the emitted beams and transmit the received beams; and
a polarization direction adjuster to adjust transmission directions of the polarized cells.

8. The apparatus in claim 7, further comprising a light detecting plate to receive the transmitted beams from the polarized cells and to selectively transmit polarized elements of the received beams.

9. The apparatus in claim 8, wherein the polarized cells are arranged in an array.

10. The apparatus in claim 9, wherein the light detecting plate, the array of polarized cells, and the polarization direction adjuster are arranged in a same plane in parallel with respect to the light source.

11. The apparatus in claim 7, wherein a polarization direction of the light beams received by the polarized cells is determined according to a tension applied from the polarization direction adjuster.
12. The apparatus in claim 11, wherein the polarization direction adjuster applies the tension independently to each of the polarized cells.
13. The apparatus in claim 8, wherein the light detecting plate transmits the polarized elements of the received beams in a predetermined direction.
14. The apparatus in claim 13, wherein the light detecting plate transmits the polarized elements when a polarized direction of the polarized elements corresponds to the predetermined direction.
15. The apparatus in claim 13, wherein the light detecting plate does not transmit the polarized elements when a polarized direction of the polarized elements does not correspond to the predetermined direction.
16. The apparatus in claim 7, wherein the polarized cells are made of a PVA doped with iodine.
17. The apparatus in claim 11, wherein the polarization direction adjuster comprises piezoelectric elements to generate the tension.
18. The apparatus of claim 13, wherein the polarized cells are arranged in a main scanning direction of the apparatus, and the light transmitted by the polarized cells is

transmitted in a sub-scanning direction of the apparatus.